

THE BRITISH COMPUTER SOCIETY

THE BCS PROFESSIONAL EXAMINATION Diploma

MULTIMEDIA

10th May 2001 – 2.30 p.m. – 4.30 p.m.

Answer FOUR questions out of SIX. All questions carry equal marks.

Time: TWO hours.

*The marks given in brackets are **indicative** of the weight given to each part of the question.*

1.
 - a) Outline the problem that the TWAIN working group was set up to address. **(7 marks)**
 - b) Outline their solution. **(8 marks)**
 - c) What are the benefits of their solution? **(10 marks)**

2.
 - a) Distinguish between lossless and lossy compression and explain a suitable application for each. **(12 marks)**
 - b) What is meant by the term bandwidth? Why is it a serious issue in the context of multimedia? **(13 marks)**

3. A new company is setting itself up in business as a producer of multimedia CDs and web-based services. You have been employed by this company to provide advice on their hardware, peripheral and networking requirements. Write a report for the managing director with clear advice on hardware and network specifications and the options available to the company. **(25 marks)**

4.
 - a) Briefly describe the principles and available supporting technologies for each of:
 - i) Digitized and synthesized sound
 - ii) A/D and D/A conversion
 - iii) The MIDI interface**(15 marks)**
 - b) The audio used in a multimedia presentation can come from a number of sources. It may be background music, sound effects, the original audio track, voice-overs etc. What are these different sound elements? Explain how they can be used to add to the overall quality of a multimedia presentation. How are they integrated into a multimedia presentation? **(10 marks)**

5. Authoring a multimedia system involves both technical and artistic considerations.
 - a) What are these considerations and how are they liable to influence your choice of authoring language, development and delivery platforms and the overall design approach? **(10 marks)**
 - b) "The implementation of a multimedia system bears very little in common with traditional software engineering. In fact it has much more in common with film production". Discuss. **(15 marks)**

[Turn over

6. a) A company specialising in the development of multimedia training is considering producing materials to support students in their BCS Professional Examinations. You have been asked to develop some initial design ideas and a prototype to support the BCS Multimedia module. What are your initial design ideas?

Show clearly the following elements:

- Visual design (story-boards, screen designs etc.)
- Content (content structure charts, media lists etc.)
- Navigation (links between sections, hyperlinks etc.)
- User Interface (interactions, menus etc.)

(18 marks)

- b) Which elements would you choose to include in your prototype and why?

(7 marks)